



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/037,670 | 01/03/2002 | Eliel Louzoun | 42390P11425 | 8281 |

8791 7590 08/29/2005

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER

AUVE, GLENN ALLEN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2111

DATE MAILED: 08/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/037,670

Applicant(s)

LOUZOUN ET AL.

Examiner

Glenn A. Auve

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,7-15,19,22-27,30-37,41,43-46,52-60,64,66-74 and 77-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,7-15,19,22-27,30-37,41,43-46,52-60,64,66-74 and 77-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 June 2005 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 7-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected based on lack of positive antecedent basis of "the shared resource" on lines 6-7.

Claims 7-14 are rejected because they depend on claim 1.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 46,52-60,64, and 66-71 are rejected under 35 U.S.C. 101 because claims 46,52-60,64, and 66-71 are not limited to tangible embodiments. In view of applicant's disclosure, Patent Application Publication US 2003/0135677 A1, paragraph [0023], the medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g. RAM, ROM, magnetic or optical storage media, or flash memory devices) and intangible embodiments (e.g. electrical, optical, acoustical or other form of propagated signals (e.g., carrier waves, infrared signals, digital signals)). As such, the claims are not limited to statutory subject matter and are therefore non-statutory.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 7, 10, 11, 13-15, 22-24,27, 33-36, 46, 52, 55, 56, 58-60, 66-67,70 and 71 are rejected under 35 U.S.C. 102(b) as being anticipated by Buch, 5,669,002.

As to claims 1, 7, 10, 11, 13, and 14, 1: Buch discloses a method, comprising:
receiving from a first requester a request to write a second indicator that comprises an identifier of the first requester to a first indicator that indicates if a component is available (a request for access is in effect a request to write the requestor's identity to the lock register since the request will determine if the lock register is available as denoted by the G0 designation and the requestor's identity is then written to the register if it gains access because the component is available); determining, in response to receiving the write request from a first requester (i.e.,

processor), whether a component is available; and replacing, if the component is available, a first indicator (i.e., G0 vector, indicating unlocked state) indicating that the shared resource is available, with a second indicator (i.e., unique ID vector of locking processor) reducing access to the component, to permit access to the component by the first requester, 7: wherein determining, in response to receiving the write request from the first requester, whether the component is available comprises determining a presence of the first indicator, 10: further comprising receiving, by execution of a write request by a second requester upon completion of access to the component by the second requester, a third indicator (i.e., G0 vector) increasing access to the component to replace the second indicator, 11: wherein the operation comprises a write of the third indicator, 13: wherein the first requester and the second requester comprise one requester, 14: wherein the first indicator and the third indicator comprise a same indicator (i.e., G0 vector) (note column 2, line 13 – column 3, line 5 and column 3, line 28 – column 5, line 60).

b. As to claims 15, 22-24, 60, 66, 67,70 and 71 the claim limitations have already been discussed with respect to claims 1, 7,10 and 13 above.

c. As to claims 27, and 33-36, Buch discloses a method of obtaining access to a
7. shared resource, comprising: receiving a request to write a second value to a register (i.e., lock register); and changing a first value to the second value in response to the request to write to the register if the register detects that the first value indicates that the shared resource is available (i.e., unlocked status vector G0 and node ID vector of accessing device/process); and limiting access to the shared resource (i.e., locking access to devices/processes with IDs other than the one matching the second value), 33: further comprising: receiving from the register the first value (i.e., unlocked status vector G0) indicating that the shared resource is available; accessing the shared resource; and changing upon completion of access to the

Art Unit: 2111

shared resource, the second value (i.e., locked status value – locking device's ID) to a third value (i.e., unlocked status vector G0) increasing access to the shared resource, 34: wherein changing the second value to the third value comprises writing the third value to the register (note column 2, lines 50-59, column 4, lines 43-64, column 5, lines 17-30, column 5, lines 46-60), 35: wherein the first value, the second value and the third value comprise variables, 36: wherein the first value and the third value comprise a same variable (note column 2, line 13 – column 5, line 60).

f. As to claims 46, 52, 55, 56, 58, and 59 the claim limitations have already been discussed with respect to claims 1, 7, 10, 13, and 14 above.

8. Claims 27, 32, 72-74, and 77-80 are rejected under 35 U.S.C. 102(b) as being anticipated by Shagam, U.S. Pat. No. 5,987,550 (previously cited).

As per claim 27, Shagam shows a method of obtaining access to a shared resource, comprising: receiving a request to write a second value to a register; and changing a first value to the second value in response to the request to write to the register if the register detects that the first value indicates that the shared resource is available; and limiting access to the shared resource (at least in col.3, lines 5-33, col.5, line 52 – col.6, line 24, and col.7, lines 41-64, wherein the processor requesting access sends a write request to the memory and if the memory determines that the shared resource is available the second value which is the identity of the requester is written to the register to indicate that the requester has obtained access and other requesters are not allowed to access the resource). Shagam shows all of the steps recited in claim 27.

As for claim 32, the argument for claim 27 applies. Shagam also shows that the shared resource comprises a peripheral device in a computer system and the peripheral device

Art Unit: 2111

contains the register (fig.1,(16a) and fig.2, wherein the shared memory is peripheral to the multiple processors). Shagam shows all of the steps recited in claim 27.

As per claim 72, Shagam shows an apparatus comprising: a resource (16a); a storage area in the resource (fig.2,(24); a first value in the storage area, which the storage area changes to a second value in response to a request from a requester to write an identifier of the requester that is included in the request to the storage area; and the second value in the storage area (at least in col.3, lines 5-33, col.5, line 52 – col.6, line 24, and col.7, lines 41-64, wherein the processor requesting access sends a write request to the memory and if the memory determines that the shared resource is available the second value which is the identity of the requester is written to the register to indicate that the requester has obtained access and other requesters are not allowed to access the resource). Shagam shows all of the steps recited in claim 72.

As for claim 73, the argument for claim 72 applies. Shagam also shows that the shared resource comprises a peripheral device in a computer system (fig.1,(16a) and fig.2, wherein the shared memory is peripheral to the multiple processors). Shagam shows all of the steps recited in claim 73.

As for claim 74, the argument for claim 72 applies. Shagam also shows that the storage area comprises a register (24). Shagam shows all of the steps recited in claim 74.

As for claim 77, the argument for claim 72 applies. Shagam also shows that the first value indicates that the resource is available (at least in col.3, lines 5-33, col.5, line 52 – col.6, line 24, and col.7, lines 41-64). Shagam shows all of the steps recited in claim 77.

As for claim 78, the argument for claim 72 applies. Shagam also shows that the second value reduces access to the resource (at least in col.3, lines 5-33, col.5, line 52 – col.6, line 24, and col.7, lines 41-64). Shagam shows all of the steps recited in claim 78.

Art Unit: 2111

As for claim 79, the argument for claim 72 applies. Shagam also shows that the storage area is linked to other storage areas containing the first value (at least in col.3, lines 5-33, col.5, line 52 – col.6, line 24, and col.7, lines 41-64). Shagam shows all of the steps recited in claim 79.

As for claim 80, the argument for claim 79 applies. Shagam also shows that the other storage areas change the first value to the second value when the storage area changes the first value to the second value (at least in col.3, lines 5-33, col.5, line 52 – col.6, line 24, and col.7, lines 41-64). Shagam shows all of the steps recited in claim 80.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2111

10. Claims 19, 41, 43-45, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buch, 5,669,002 (hereinafter Buch).

a. As to claims 19, 41, and 64, although Buch fails to disclose that the first indicator is maintained in a set-by-write register written to by the processes attempting to access the component, Buch does disclose that the registers are written to in response to processes attempting to access the component (note column 2, lines 13-36 and column 4, lines 10-35 and column 4, line 65 – column 5, line 16 and column 5, lines 31-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the registers written to by any equivalent means, including by the processes themselves, or in response to a read access to the registers by the processes, since the underlying concept of writing a values to the registers to indicate that the shared resource is locked is not impacted by the manner in which the write is performed.

d. As to claim 43, Buch discloses that the second value comprises an identifier of a process and reading the register to determine that the register contains the identifier (note column 2, lines 13-48).

e. As to claims 44 and 45, Buch discloses that replacing the second indicator with the third indicator comprises writing the third indicator to the register, wherein the first indicator and the third indicator comprise the same indicator (note column 4, lines 43-64).

11. Claims 12, 37, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buch, 5,669,002 (hereinafter Buch) in view of Montgomery et al., 6,529,933 (hereinafter Montgomery).

a. As to claims 12 and 57, Buch fails to disclose that the first requester and the second requester comprise processes.

Montgomery discloses that the first and second requesters comprise processes (note column 1, lines 15-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have the requesters be processes, as Montgomery teaches, in the system of Buch so as to allow multiple processes to coordinate their work on a common task, as Montgomery teaches at column 1, lines 15-22.

b. As to claim 37, the claimed elements have already been discussed with respect to claim 15, above, with the exception of the steps comprising: reading and writing of the registers by a process.

Buch fails to disclose that the reading and writing of the register is done by a process.

Montgomery discloses that the a process does the reading and writing of a semaphore (note column 1, lines 15-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have the requesters and therefore the readers and writers of the lock registers of Buch be processes, as Montgomery teaches, so as to allow multiple processes to coordinate their work on a common task, as Montgomery teaches at column 1, lines 15-22.

12. Claims 8, 9, 23, 24, 53, 54, 68 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buch, 5,669,002 (hereinafter Buch) in view of Marshall et al., 6,529,983 (hereinafter Marshall).

a. As to claims 8, 23, 53, and 68, Buch fails to disclose that wherein determining, in response to receiving the write request from the first requester, whether the component is available comprises determining based on an external indicator that the component is available.

Marshall discloses that determining whether a component is available comprises determining based on an external indicator that the component is available (note column 12, line 53 – column 13, line 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of an external indicator to determine if the component is available, as Marshall teaches, in the system of Buch so as to allow for the locking of multiple resources, as Marshall teaches at column 13, lines 4-8.

b. As to claims 9, 24, 54, and 69, Marshall discloses that the external indicator comprises a flag (i.e., condition code register comprises multiple bits/flags indicating various status conditions).

Response to Arguments

13. Applicant's arguments filed 16 June 2005 have been fully considered but they are not persuasive. Applicant argues that Buch does not show that the request provides the identifier to be written and/or that the request in Buch does not comprise an identifier of the first requester. However, it is noted that these limitations are not contained in the claims other than claim 72, and the rejection of claim 72 as being anticipated by Buch has been withdrawn, however, a new ground of rejection has been made as noted above. Claim 1, for example, recites "receiving from a first requester a request to write a second indicator that comprises an identifier of the first requester to a first indicator that indicates if a component is available". The phrase "that comprises an identifier of the first requester" modifies "a second indicator" not "a request". As shown by Buch, the second indicator does comprise an identifier of the first requester in that the requester's identity is written to the lock register if the register is available as denoted by the G0

Art Unit: 2111

designation as noted above in the rejection. Therefore this argument is not persuasive with respect to claims 1, 7, 10, 11, 13-15, 22-24, 27, 33-36, 46, 52, 55, 56, 58-60, 66-67, 70 and 71.

14. Applicant's arguments, see pages 11-12, filed 16 June 2005, with respect to the rejection(s) of claim(s) 32 and 73 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Shagam.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn A. Auve whose telephone number is (571) 272-3623. The examiner can normally be reached on M-F 8:00 AM-5:30 PM, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (571) 272-3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2111

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn A. Auve
Primary Examiner
Art Unit 2111

gaa
24 August 2005